

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
29 September 2005 (29.09.2005)

PCT

(10) International Publication Number
WO 2005/091418 A3

(51) International Patent Classification:

H01M 8/06 (2006.01) H01M 8/22 (2006.01)

(74) Agent: ZACCO DENMARK A/S; Hans Bekkevolds Allé
7, DK-2900 Hellerup (DK).

(21) International Application Number:

PCT/DK2005/000196

(22) International Filing Date: 22 March 2005 (22.03.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

PA 2004 00469 23 March 2004 (23.03.2004) DK

(71) Applicant (for all designated States except US): AM-
MINEX A/S [DK/DK]; Kemitortvet, Bygning 206,
DK-2800 Kgs. Lyngby (DK).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY,
TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU,
ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,
SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,
GQ, GW, ML, MR, NE, SN, TD, TG).

(72) Inventors; and

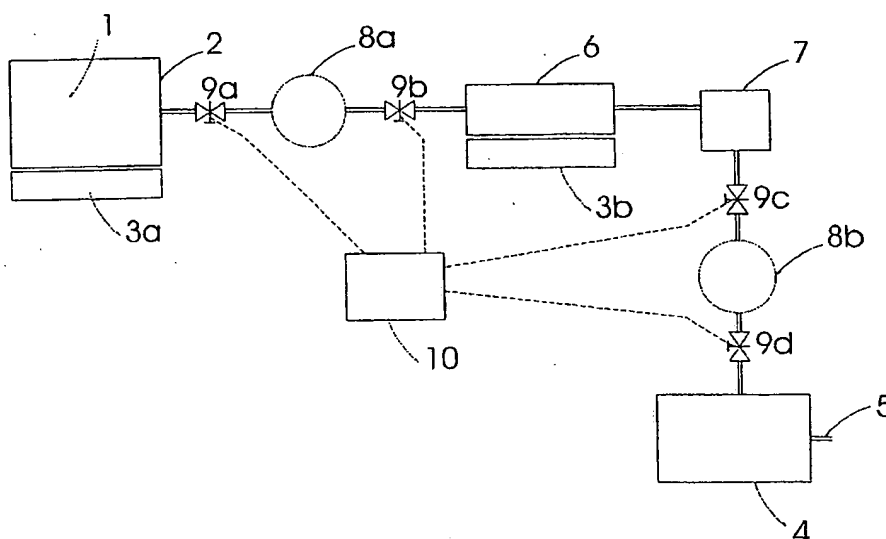
(75) Inventors/Applicants (for US only): CHRISTENSEN,
Claus, Hviid [DK/DK]; Vildroseparken 39, DK-3540
Lynge (DK). JOHANNESSEN, Tue [DK/DK]; Platan-
haven 110, DK-2600 Glostrup (DK). NØRSKOV, Jens,
Kehlet [DK/DK]; Kong Valdemarsvej 66, DK-2940 Holte
(DK). QUADE, Ulrich [DK/DK]; Gammellosevej 331,
DK-2880 Bagsværd (DK).

Published:

— with international search report

[Continued on next page]

(54) Title: USE OF AN AMMONIA STORAGE DEVICE IN PRODUCTION OF ENERGY



(57) Abstract: An electric power generating unit comprising (i) an ammonia storage device in the form of a container (2) comprising an ammonia absorbing and releasing salt of the general formula: $M <sb>a </sb> (NH <sb>3 </sb>) <sb>n </sb> X <sb>z </sb>$, wherein M is one or more cations selected from alkali metals, alkaline earth metals, and transition metals such as Li, K, Mg, Ca, V, Cr, Mn, Fe, Co, Ni, Cu or Zn, X is one or more anions selected from fluoride, chloride, bromide, iodide, nitrate, thiocyanate, sulphate, molybdate, phosphate, and chlorate ions, a is the number of cations per salt molecule, z is the number of anions per salt molecule, and n is the coordination number of 2 to 12. (ii) means (3a) for heating said container (2) and ammonia absorbing and releasing salt for releasing ammonia gas and (iia) a fuel cell for converting ammonia directly into electric power; or (iib1) a reactor (6) for dissociating ammonia into hydrogen and nitrogen and (iib2) a fuel cell (4) for converting hydrogen into electric power.

WO 2005/091418 A3



— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(88) **Date of publication of the international search report:**
1 June 2006